

ABSTRACT

A filament assembly configured for generating electrons and including nanoparticles and/or nanofilaments. The filament assembly is optionally incorporated an analytical systems such as a mass analyzer or x-ray source.

- 5 The nanoparticles and/or nanofilaments are configured to produce improved electron generation, thermal stability, and/or other properties relative to the prior art. Methods of using the filament assembly are described.